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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,980	04/20/2001	Werner Jacob	INA-PT049	3600

3624 7590 07/28/2003

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EXAMINER

ABDELNOUR, DENNIS J

ART UNIT PAPER NUMBER

3681

DATE MAILED: 07/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/763,980

Applicant(s)

JACOB ET AL.

Examiner

Dennis J. Abdelnour

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

The following action is in response to Amendment C, entered pursuant to the timely filed RCE and fee. Claim 1 is pending.

Drawings

1. A substitute for Figure 1 was received on 23 September 2002. The drawing includes the "Prior Art" heading previously requested. The formal drawing incorporating the change has been entered into the case.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Griswold (USPN 2,135,477) in view of Rohn (USPN 1,325,113) and Ebert (DE 35 22 600 A1).

Griswold discloses a differential for a motor vehicle in Figure 2. The differential has a bevel-pinion shaft 24, supported in a drive housing 11 by two spaced and axially pretensioned angular contact ball bearings 26 and 27 (see the second column, lines 14-31 concerning bearing preload). The bevel pinion gear 25 and the ring gear 21 drive the differential unit, which is mounted in the drive housing 11, the differential gears, the output gears, and the output axle shafts.

The bearings 26 and 27 are unilaterally loadable angular contact bearings that face each other in an O-arrangement. Ball bearing 26 is positioned adjacent the bevel pinion gear 25 and is

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larger than ball bearing 27. The bearing races of ball bearings 26 and 27 have different diameters and different pressure angles.

Griswold does not disclose double row tandem angular contact bearings or a deformable sleeve supporting the inner ring of the second ball bearing.

Rohn discloses a ball bearing arrangement in Figure 1 secured over a shaft. The ball bearing is arranged as a unilaterally loadable, double-row tandem angular contact bearing comprising a one-piece inner ring 5 and a one-piece outer ring 14. The outer ring 14 includes shoulders 19 and 20, one shoulder for each bearing race.

It would have been obvious to one having ordinary skill in the art at the time of the invention to substitute the bearings shown in Griswold with the double-row tandem bearing arrangement as taught by Rohn in order to distribute a thrust load between both bearings, and also to provide a compensation for wear.

Ebert discloses in Figure 1 a differential assembly with roller bearings. A deformable sleeve 9 is disposed between the two bearings on the bevel pinion shaft. The deformable sleeve 9 acts to pretension the bearings.

It would have been obvious to one having ordinary skill in the art at the time of the invention to use a deformable sleeve disposed between the two bearings of Griswold in view of Rohn as taught by Ebert in order to reduce the number of assembly parts to pretension the bearing.

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Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN 5,226,737 to Sandy, Jr., USPN 4,527,443 to Ohoka, USPN 5,716,247 to Ogino, USPN 2,241,606 to Kysor, USPN 2,147,144 to Carlson et al., USPN 1,961,323 to Almen, and US Pub. No. 20002/0186910 A1 to Maret.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis J. Abdelnour whose telephone number is (703) 305-5309. The examiner can normally be reached on Monday-Friday, 8:00-5:30, alternate Fridays off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on (703) 308-0830. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9326 for regular communications and (703) 872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2168.

dja



July 23, 2003


CHARLES A. MARMOR
SUPERVISORY PATENT EXAMINER
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